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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/775,347	02/10/2004	Philip D. Nguyen	2003-IP-009585U1	1182

7590

06/12/2006

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EXAMINER

THEXTON, MATTHEW

ART UNIT	PAPER NUMBER
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1714

DATE MAILED: 06/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/775,347	Applicant(s) NGUYEN ET AL.	
	Examiner Matthew A. Thexton	Art Unit 1714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) 1-11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 12-17 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☒ Claim(s) 1-17 are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>27 sheets</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Information Disclosure Statement

The information disclosure statements filed

- 1) 2004 February 10;
- 2) 2005 April 25;
- 3) 2005 April 25;
- 4) 2005 June 15;
- 5) 2005 July 5;
- 6) 2005 July 12;
- 7) 2005 August 15;
- 8) 2005 August 29;
- 9) 2006 April 24; and
- 10) 2006 May 30

taken cumulatively, fail to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because it is concluded that given the nature of the claimed subject matter that the lengthy IDS involves cumulative references. The cumulative IDS comprises 272 US patent documents, 34 US patent applications, 38 foreign patent documents, and 47 non-patent literature documents. While the USPTO has relieved Applicants of the responsibility of submitting copies of many types of references, including US patent documents and applications, this is not seen as relieving Applicants of compliance with 37 CFR 1.98(c), which has the effect of removing cumulative information from consideration and from publication on the face of any issuing US patent (see also

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MPEP 609.4(a)(II) (fifth paragraph, beginning "Second") and MPEP 2004 (13)). The submissions have been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this cumulative information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609.05(a).

It is noted that submissions 6) and 10) appear to be identical.

It is noted that the citations of "search reports" do not comply with 37 CFR 1.98(b)(5) with respect to "publication" date.

It is noted that numerous submissions cited under "non-patent literature" fail to comply with 37 CFR 1.98(b)(5) with respect to "publication" date (see MPEP 609.04(a)(I)(seventh paragraph, third to last sentence: month and year required).

It is noted that the citations of pending US patent applications fail to comply with MPEP 609.04(a)(I)(seventh paragraph, last sentence, section heading requirement).

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Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

Group I, Claims 1-6, drawn to a method of controlling proppant flowback, classified in class 166, subclass 295.

Group II, Claims 7-17, drawn to a resin composition, classified in class 523, subclass 130.

The inventions are distinct, each from the other because of the following reasons:

Inventions II and I are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the product as claimed can be used in a materially different process of use, such as gravelling, filter forming, or consolidating weak formations.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

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Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

During a telephone conversation between Robert Kent and Primary Patent Examiner Zakiya N. Walker on 9/26/05 a provisional election was made without traverse to prosecute the invention of group II, claims 7-17. Affirmation of this election must be made by applicant in replying to this Office action. Claims 1-6 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Supplemental Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

Group A, Claims 7-11, drawn to a resin composition, classified in class 524, subclass 139, et al., and 525/502.

Group B, Claims 12-17, drawn to particles coated with a resin composition, classified in class 507, subclass 220,924.

The inventions are distinct, each from the other because of the following reasons:

Inventions A and B are related as mutually exclusive species in an intermediate-final product relationship. Distinctness is proven for claims in this relationship if the intermediate product is useful to make other than the final product, and the species are patentably distinct (MPEP § 806.05(j)). In the instant case, the intermediate product is deemed to be useful as paint or moldable material and the inventions are deemed

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patentably distinct because there is nothing on this record to show them to be obvious variants. It is noted that once the resin coats the particles they are bonded and inseparable; the resin material having lost its independent character.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

Because these inventions are distinct for the reasons given above and the search required for Group A is not required for Group B, restriction for examination purposes as indicated is proper.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

During a telephone conversation between Robert A. Kent, 580-251-3125, and Primary Patent Examiner Matthew A. Thexton on 2006 June 6 a provisional election was made without traverse to prosecute the invention of group B, claims 12-17. Affirmation of this election must be made by applicant in replying to this Office action. Claims 7-11 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim

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remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Specification

The disclosure is objected to because of the following informalities: The provisions of 37 CFR 1.52(b)(6) have not be adhered to with respect to several aspects of the paragraph numbering. A substitute specification as provided for by 37 CFR 1.121(b)(3) is suggested.

Appropriate correction is required.

Claims Version

The listing of claims submitted in the paper filed 2004 February 10 (original) has been examined.

Claims Analysis

Claims 1-11 are withdrawn.

Independent claim 12 is directed to proppant coated with resin mixtures, said mixtures comprising:

- about 5% to about 30% phenol;
- about 40% to about 70% phenol formaldehyde;
- about 10 to about 40% furfuryl alcohol;

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-about 0.1% to about 3% of a silane coupling agent; and

-about 1% to about 15% of a surfactant.

Claims 13-17 depend directly or indirectly from claim 12 and specify or further limit: the type of silane coupling agent; the type of surfactant; the further presence and type of a solvent.

Claim(s) Rejection(s) - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 12-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The basis upon which to calculate the %'s is not set forth, rendering the claims indefinite and unclear.

35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

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the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim(s) Rejection(s)

Claims 12-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nguyen et al. (US 5924488A) in view of Anderson et al. (US 4042032) or McLaughlin (US 4070865), or Murphey et al. (US 5128390A).

The present claims are broadly discussed hereinabove in the section ***Claims Analysis*** which is incorporated by reference.

The reference '488 discloses proppants comprising hardenable resin coated particles, which may be phenol-aldehyde resins (column 5, lines 3-4), in viscosity controlling diluents such as furfuryl alcohol and phenol (column 5, lines 16-19), and resin-to-sand coupling agent such as aminosilanes (column 5, lines 22-33); which hardenable resins are disclosed to be known in the art, such as in references '032, '865, and 390 (column 4, lines 55-65). '488 fails to disclose the use of a surfactant.

'032, '865, and 390 each disclose the use of surfactant in hardenable resin compositions; '032 (column 6, lines 13-30), '865 (column 4, lines 13-28), '390 (column 6, line 66 to column 7, line 57). In view of '488 incorporating these disclosures, it is

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concluded that it would have been obvious to one of ordinary skill in the art at the time of the invention to have employed surfactants in the mixtures of '488. It would have been obvious to one of ordinary skill in the art at the time of the invention to have employed the phenol-aldehyde resins, viscosity controlling diluents such as furfuryl alcohol and phenol, and resin-to-sand coupling agent such as aminosilanes, each as suggested in '488, and thereby arriving at subject matter encompassed by Applicant's claims.

Claims 12-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson et al. (US 4042032) and Nguyen et al. (US 7013976B2).

The present claims are broadly discussed hereinabove in the section ***Claims Analysis*** which is incorporated by reference.

'032 discloses coated proppants comprising resins such as phenol formaldehyde (column 3, lines 31-42), diluents such as furfuryl alcohol and phenol (column 4, lines 3-8), resin-to-sand coupling agent such as aminosilanes (column 4, line 47 to column 5, line 33), and non-emulsifying surfactant such as cationic (column 6, lines 13-30, and examples). It would have been obvious to one of ordinary skill in the art at the time of the invention to have employed the phenol-aldehyde resins, viscosity controlling diluents such as furfuryl alcohol and phenol, resin-to-sand coupling agent such as aminosilanes, and non-emulsifying surfactant such as cationic each as suggested in '032, and thereby arriving at subject matter encompassed by Applicant's claims 12-16, where claim 16 "solvent" encompasses phenol or furfuryl alcohol.

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'976 discloses the hardenable resin mixtures encompassed by Applicant's claims and further discloses the solvents encompassed by the claims (column 4, lines 44-55) and surfactants encompassed by the claims (column 4, lines 18-31). It would have been obvious to one of ordinary skill in the art at the time of the invention to have employed the hardenable resin mixtures incorporating the species of surfactants and "solvents" as disclosed in '976 into the proppants of '032 since each disclosure is directed to the same working environment.

Citation of Pertinent Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Todd et al. (US 6311773B1) was cited in the description, and is cited to complete the record.

Nguyen (US 2005/0045384A1) discloses the hardenable resin mixtures encompassed by Applicant's claims 7-11, and claims their use with drilling fluid while drilling of subterranean zones.

Nguyen (US 6997259B2) discloses the hardenable resin mixtures encompassed by Applicant's claims 7-11 further combined with filler, and claims their use in treating of subterranean zones.

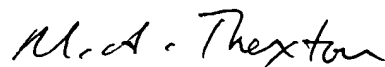
Armbruster (US 4694905) was cited in the International Search Report, but is not deemed to provide any information beyond that in the references relied upon for rejections hereinabove.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew A. Thexton whose telephone number is 571-272-1125. The examiner can normally be reached on Tuesday-Friday, 10:00 to 7:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasudevan S. Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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